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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/662,768	09/15/2003	Randy Wickman	7385-88348	1482
24628	7590	04/20/2006		EXAMINER
WELSH & KATZ, LTD				MOONEY, MICHAEL P
120 S RIVERSIDE PLAZA				
22ND FLOOR			ART UNIT	PAPER NUMBER
CHICAGO, IL 60606				2883

DATE MAILED: 04/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

H/A

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/662,768	WICKMAN, RANDY
	Examiner	Art Unit
	Michael P. Mooney	2883

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION:

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 30 January 2006.
- 2a) This action is FINAL.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1,2,6-13 and 18-30 is/are rejected.
- 7) Claim(s) 3-5 and 15-17 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____.
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____.

## DETAILED ACTION

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 12-13, 18-21, 1-2, 6-8, 25-29, 30 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 12-13 & 16 (and claims 14, 18-21, etc.) of U.S. Patent No. 6793409, hereafter referred to as '409. Although the conflicting claims are not identical, they are not patentably distinct from each other because:

'409 claims 12-13 & 16 teach an apparatus for guiding an optical beam progressing along an axis of transmission defined by an optical converter because '409 claim 12 has a light transmissive via with an optically transparent center area and a plurality of reflective or refractive elements that confine the transmitted optical signal within the via. Furthermore, '409 claim 16 teaches a vertical cavity surface emitting

laser (VCSEL) having an axis of transmission directed through the via. The said VCSEL at least suffices as the converter stated in instant claim 12. Therefore, '409 claims 12-13 & 16 inherently teach an apparatus for guiding an optical beam progressing along an axis of transmission defined by an optical converter.

Furthermore, '409 claims 12-13 & 16 teach an optically transparent substrate (col. 8 lines 9-12) disposed in the axis of transmission of the optical converter with a predominant plane of the substrate disposed perpendicular to the axis of transmission and so that the optical beam passes directly through the substrate. All of these elements must be inherently contained in the device defined in '409 claims 12-13 & 16.

Also, although '409 claims 12 & 13 do not explicitly state "plurality of discrete refracting or reflecting elements adapted to reflect the optical beam away from the plurality of refracting or reflecting elements", it would have been obvious to do so because '409 claim 13 what inherently must be discrete elements. Further, since '409 claims 12 & 13's reflective or refractive elements (RREs) must confine the transmitted optical signal within the via, then the RREs are inherently adapted to reflect the optical beam away from the plurality of refracting or reflecting elements in order for the beam to remain confined.

'409 claims 12 & 13 inherently teach said refracting or reflecting elements being disposed around the axis of transmission within a body of the optically transparent substrate to confine the optical beam to the axis of transmission (see claim 13).

Thus, by the above, it is shown that '409 claims 12-13 & 16 merely use different words to describe the same invention. From the standpoint of obviousness double

patenting, using different words to describe the same thing is obvious. Instant claim 12 merely uses different words to describe what is contained in '409 claims 12-13 & 16. Thus instant claim 12 is appropriately rejected under obviousness-type double patenting.

Regarding instant claim 13, the optically transparent substrate is inherently a mounting substrate (see, e.g., the guide pins of '409 claim 20).

Regarding instant claim 18, see '409 claim 13.

Regarding instant claim 19, see '409 claim 14.

Regarding instant claim 20, see '409 claim 14 (the material is inherently reflective).

Regarding instant claim 21, see '409 claims 12-13.

Regarding instant claim 30, see '409 claims 12-13, 18, 19, 21. The configuration(s) defined by claims 12-13, 18, 19, 21 inherently will guide the beam along the axis of transmission.

The above arguments also apply to the analogous method claims 1-2, 6-8, 25-29 such that they are also rendered obvious as double patenting in view of the claims in '409.

Each of the aforementioned instant claims is taught by the '409 claims. Different wording is used to describe the same structure(s)/method(s).

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

**Claims 1-2, 6-13, 18-30 are rejected under 35 U.S.C. 103(a) as being obvious over Wickman et al. (6793409).**

The applied reference has a common inventor with the instant application.

Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing

that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

Although, Wickman et al. '409 does not use precisely the same wording as the instant application, '409 does teach the same structure for claims 12-14, 18-21. See below

U.S. Patent No. 6793409, hereafter referred to as '409. Although the conflicting claims are not identical, they are not patentably distinct from each other because:

'409 claims 12-13 & 16 teach an apparatus for guiding an optical beam progressing along an axis of transmission defined by an optical converter because '409 claim 12 has a light transmissive via with an optically transparent center area and a plurality of reflective or refractive elements that confine the transmitted optical signal within the via. Furthermore, '409 claim 16 teaches a vertical cavity surface emitting laser (VCSEL) having an axis of transmission directed through the via. The said VCSEL at least suffices as the converter stated in instant claim 12. Therefore, '409 claims 12-13 & 16 inherently teach an apparatus for guiding an optical beam progressing along an axis of transmission defined by an optical converter.

Furthermore, '409 claims 12-13 & 16 teach an optically transparent substrate (col. 8 lines 9-12) disposed in the axis of transmission of the optical converter with a predominant plane of the substrate disposed perpendicular to the axis of transmission and so that the optical beam passes directly through the substrate. All of these elements must be inherently contained in the device defined in '409 claims 12-13 & 16.

Also, although '409 claims 12 & 13 do not explicitly state "plurality of discrete refracting or reflecting elements adapted to reflect the optical beam away from the plurality of refracting or reflecting elements", it would have been obvious to do so because '409 claim 13 what inherently must be discrete elements. Further, since '409 claims 12 & 13's reflective or refractive elements (RREs) must confine the transmitted optical signal within the via, then the RREs are inherently adapted to reflect the optical beam away from the plurality of refracting or reflecting elements in order for the beam to remain confined.

'409 claims 12 & 13 inherently teach said refracting or reflecting elements being disposed around the axis of transmission within a body of the optically transparent substrate to confine the optical beam to the axis of transmission (see claim 13).

Thus, by the above, it is shown that '409 claims 12-13 & 16 merely use different words to describe the same invention. From the standpoint of obviousness double patenting, using different words to describe the same thing is obvious. Instant claim 12 merely uses different words to describe what is contained in '409 claims 12-13 & 16. Thus instant claim 12 is appropriately rejected under obviousness-type double patenting.

Regarding instant claim 13, the optically transparent substrate is inherently a mounting substrate (see, e.g., the guide pins of '409 claim 20).

Regarding instant claim 18, see '409 claim 13.

Regarding instant claim 19, see '409 claim 14.

Regarding instant claim 20, see '409 claim 14 (the material is inherently reflective).

Regarding instant claim 21, see '409 claims 12-13.

Regarding instant claim 30, see '409 claims 12-13, 18, 19, 21. The configuration(s) defined by claims 12-13, 18, 19, 21 inherently will guide the beam along the axis of transmission.

Thus, claims 12-14, 18-21, 30 are rejected.

One of ordinary skill would have been motivated to use different wording in order to describe the same thing with different words for the purpose of being able to describe the same invention in different ways.

Regarding claims 22-24, although '409 does not explicitly state using square, octagon, or random array shapes it would have been obvious to do so because it is conventionally known to use square, octagon, or random array shapes along the axis of transmission of holey waveguides. One of ordinary skill would have been motivated to use the said shapes/configurations for the purpose of providing the needed transmission properties or manufacturing convenience, etc. Thus claims 22-24 are rejected.

By the reasons and references above each and every element of each of method claims 1-2, 6-11, 25-29 is rendered obvious. Thus claims 1-2, 6-11, 25-29 are rejected. If Applicant disagrees with this obviousness holding, then Applicant should submit evidence showing this obviousness holding is errant. Examiner will then consider

restricting the apparatus claims from the method claims (as was already stated in the 10/18/05 rejection).

***Allowable Subject Matter***

Claims 15-17, 3-5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art, either alone or in combination, does not disclose or render obvious an auxiliary substrate in combination with the rest of each of respective claims 15-17, 3-5.

It is noted that each of respective claims 15-17, 3-5 is allowable because the unique combination of each and every specific element stated in the respective claim.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

***Response to Arguments***

Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

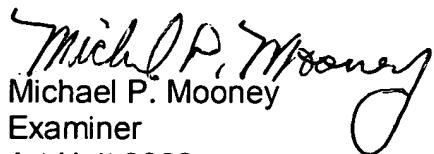
***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Maxwell (20050036731) discloses various shapes/configurations for holey waveguides.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael P. Mooney whose telephone number is 571-272-2422. The examiner can normally be reached during weekdays, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached on 571-272-2415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-1562.

  
Michael P. Mooney  
Examiner  
Art Unit 2883

  
Frank G. Font  
Supervisory Patent Examiner  
Art Unit 2883

FGF/mpm  
4/12/06